Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. - 70. (Canceled)

71. (Previously Presented) A method of manufacturing a photomask blank comprising forming a thin film on a transparent substrate by a reactive sputtering method with a sputtering target disposed in a vacuum chamber, wherein the thin film is formed at a deposition rate of 6 nm/sec or less, in a mixture gas atmosphere containing helium gas.

72. (Previously Presented) The method of manufacturing a photomask blank according to claim 71, wherein the content of the helium gas present in the mixture gas atmosphere is 30 to 90 vol%.

73. (Previously Presented) The method of manufacturing a photomask blank according to claim 71, wherein the content of the helium gas present in the mixture gas is 40 to 60 vol%.

74. (Previously Presented) The method of manufacturing a photomask blank according to claim 71, wherein the thin film is a Cr-containing film.

75. (Previously Presented) The method of manufacturing a photomask blank according to claim 74, wherein the transparent substrate is composed of quartz glass.

76. (Previously Presented) The method of manufacturing a photomask, wherein a mask pattern is formed by selectively removing the thin film in the photomask blank obtained by the manufacturing method of claim 71.

77. (Previously Presented) A method of manufacturing a photomask blank comprising forming a thin film having a light-shielding function on a transparent substrate by a sputtering method, with a sputtering target containing one or a plurality of transition metals or the compounds thereof, disposed in a vacuum chamber into which an atmosphere gas has

been introduced, wherein the thin film is formed by utilizing a gas in which the content of helium gas is 30 to 90 vol% as the atmosphere gas, at a speed selected for the number of particles in the thin film to be within a suitable range for the thin film, as the speed for forming the thin film in the atmosphere gas.

78. (Previously Presented) The method of manufacturing a photomask blank according to claim 77, wherein the atmosphere gas contains helium gas and the gas allowing at least any one of the elements selected from carbon, oxygen and nitrogen to be contained in the thin film.

79. (Previously Presented) The method of manufacturing a photomask blank according to claim 77, wherein the content of the helium gas present in the atmosphere gas is 40 to 65 vol%.

80. (Previously Presented) The method of manufacturing a photomask blank according to claim 77, wherein the thin film contains one of the elements selected from carbon or oxygen, or both of them.

81. (Previously Presented) The method of manufacturing a photomask blank according to claim 77, wherein the thin film is a laminated film of a light-shielding film that contains carbon, and an anti-reflective film that contains oxygen, and at least one of the light-shielding or the anti-reflective film, or both of them are formed by a sputtering method in an atmosphere containing helium gas.

82. (Previously Presented) The method of manufacturing a photomask blank according to claim 81, wherein a nitride film containing nitrogen and the same metal material as metal material contained in the thin film is formed between the transparent substrate and the thin film.

83. (Previously Presented) The method of manufacturing a photomask blank according to claim 82, wherein the thin film, or the thin film and the nitride film, is or are formed by inline sputtering.

84. (Previously Presented) The method of manufacturing a photomask blank according to claim 77, wherein the thin film is a Cr-containing film.

85. (Previously Presented) The method of manufacturing a photomask blank according to claim 77, wherein the transparent substrate is composed of quartz glass.

86. (Previously Presented) A method of manufacturing a photomask blank for forming a mask pattern by selectively removing the film formed on the transparent substrate of the photomask blank obtained by the manufacturing method of claim 77.

87. (Previously Presented) A fine pattern forming method for forming a fine pattern on a substrate by a photolithography method, utilizing the photomask made according to claim 86 as a mask used in transferring the fine pattern.

88. (Previously Presented) The method of manufacturing a photomask blank according to claim 77, wherein a deposition rate for forming the thin film by a sputtering method is 0.5 nm/sec to 6 nm/sec.

89. (Previously Presented) A method of manufacturing a photomask blank comprising forming a thin film having at least a light-shielding function on a transparent substrate by a sputtering method, with a sputter target including one or a plurality of transition metals or the compounds thereof, disposed in a vacuum chamber into which an atmosphere gas has been introduced, wherein the thin film is formed at a selected thin film forming speed for the number of particles in the thin film to be within a suitable range for the thin film, and before introducing the atmosphere gas in the vacuum chamber, correlation between a content of helium gas included in the atmosphere gas and a film stress of the thin film is previously obtained, and the content of the helium gas is determined from the correlation, for the thin

film to have a film stress with which a mask pattern obtained after patterning the thin film becomes a desired pattern position accuracy, and in the atmosphere gas containing the helium gas, the thin film is deposited by sputtering.

90. (Previously Presented) The method of manufacturing a photomask blank according to claim 89, wherein the atmosphere gas contains at least any one of the elements selected from carbon, oxygen, and nitrogen and helium gas in the thin film.

91. (Previously Presented) The method of manufacturing a photomask blank according to claim 89, wherein the thin film contains one of the elements selected from carbon or oxygen, or both of them.

92. (Previously Presented) The method of manufacturing a photomask blank according to claim 89, wherein the thin film is a laminated film of a light-shielding film that contains carbon, and an anti-reflective film that contains oxygen, and at least one of the light-shielding or the anti-reflective film, or both of them are formed by a sputtering method in an atmosphere containing helium gas.

93. (Previously Presented) The method of manufacturing a photomask blank according to claim 92, wherein a nitride film containing nitrogen and the same metal material as metal material contained in the thin film is formed between the transparent substrate and the thin film.

94. (Previously Presented) The method of manufacturing a photomask blank according to claim 89, wherein the thin film is a Cr-containing film.

95. (Previously Presented) The method of manufacturing a photomask blank according to claim 89, wherein the transparent substrate is composed of quartz glass.

96. (Previously Presented) A method of manufacturing a photomask blank for forming a mask pattern by selectively removing the film formed on the transparent substrate of the photomask blank obtained by the manufacturing method of claim 89.

97. (Previously Presented) A fine pattern forming method for forming a fine pattern on a substrate by a photolithography method, wherein as a mask used in transferring the fine pattern, the photomask made according to claim 96 is utilized.

98. (Previously Presented) A photomask blank having a thin film, which has a light-shielding function, formed on a transparent substrate, containing one or a plurality of transition metals or the compounds thereof, and containing at least one of the elements selected from carbon, oxygen and nitrogen, wherein the thin film suppresses a film stress to be small by containing He and the thin film has inner tensile stress, and wherein a content of He in the thin film is in a range of a film stress with which an amount of change in flatness becomes 2 μm or less.

99. (Previously Presented) The photomask blank according to claim 98, wherein the thin film is a laminated film of a light-shielding film that contains one or a plurality of transition metals or the compounds thereof and helium and carbon, and an anti-reflective film that contains one or a plurality of transition metals or the compounds thereof and oxygen.

100. (Previously Presented) The photomask blank according to claim 99, having the thin film in which oxygen is continuously decreased and carbon is continuously increased from a surface of the thin film toward the transparent substrate.

101. (Previously Presented) The photomask blank according to claim 98, wherein carbon content is in a range of 0 to 25 at%, and oxygen content is in a range of 0 to 70 at%.

102. (Previously Presented) The photomask blank according to claim 99, wherein the thin film further contains nitrogen.

103. (Previously Presented) The photomask blank according to claim 98, wherein the size of the crystal grain of the thin film is 1 to 7 nm.

104. (Previously Presented) The photomask blank according to claim 98, wherein a nitride film containing nitrogen and the same metal material as metal material contained in the thin film is formed between the transparent substrate and the thin film.

105. (Previously Presented) The photomask blank according to claim 98, wherein the thin film is a Cr-containing film.

106. (Previously Presented) The photomask blank according to claim 98, wherein the transparent substrate is composed of quartz glass.

107. (Previously Presented) A photomask in which a mask pattern is formed by patterning the thin film formed on a transparent substrate of the photomask blank of claim 98.

108. (Previously Presented) A photomask blank having a thin film, which has a light-shielding function, formed on a transparent substrate, containing one or a plurality of transition metals or the compounds thereof, and containing any one of the elements selected from carbon, oxygen, and nitrogen, wherein the thin film suppresses a film stress to be small by containing He, and the size of the crystal grain of the thin film is 1 to 7 nm.

109. (Previously Presented) The photomask blank according to claim 108, wherein the thin film is a laminated film of a light-shielding film that contains one or a plurality of transition metals or the compounds thereof and helium and carbon, and an anti-reflective film that contains one or a plurality of transition metals or the compounds thereof and oxygen.

110. (Previously Presented) The photomask blank according to claim 109, having the thin film in which oxygen is continuously decreased and carbon is continuously increased from the surface of the thin film toward a transparent substrate.

111. (Currently Amended) The photomask blank according to claim 108, wherein carbon content is in a range of 0 to 25~~ate~~ at%, and oxygen content is in a range of 0 to 70 at%.

112. (Previously Presented) The photomask blank according to claim 109, wherein the thin film further contains nitrogen.

113. (Previously Presented) The photomask blank according to claim 108, wherein a nitride film containing nitrogen and the same metal material as metal material contained in the thin film is formed between the transparent substrate and the thin film.

114. (Previously Presented) The photomask blank according to claim 113, having the thin film in which oxygen is continuously decreased and carbon is continuously increased from a surface of the thin film toward the transparent substrate, wherein a content of nitrogen in the nitride film is relatively larger than a content of nitrogen included in the thin film, and with increasing content of nitrogen of the nitride film, the metal is decreased.

115. (Previously Presented) The photomask blank according to claim 108, wherein the thin film is a Cr-containing film.

116. (Previously Presented) The photomask blank according to claim 108, wherein the transparent substrate is a quartz glass.

117. (Previously Presented) A photomask in which a mask pattern is formed by patterning the thin film formed on the transparent substrate of the photomask blank of claim 108.

118. (Previously Presented) A photomask blank having a thin film formed on a transparent substrate, wherein the thin film has a light-shielding function and contains one or a plurality of transition metals or the compounds thereof, wherein the thin film is a laminated film of a light-shielding film that contains carbon and an anti-reflective film that contains oxygen, wherein a nitride film containing nitrogen and the same transition metal material as metal material contained in the thin film is formed between the transparent substrate and the laminated film, and wherein the thin film also contains He.

119. (Previously Presented) The photomask blank according to claim 118, wherein the light-shielding film contains He.

120. (Previously Presented) The photomask blank according to claim 118, having the thin film in which oxygen is continuously decreased and carbon is continuously increased from a surface of the thin film toward the transparent substrate.

121. (Previously Presented) The photomask blank according to claim 119, wherein carbon content is in a range of 0 to 25 at%, and oxygen content is in a range of 0 to 70 at%.

122. (Previously Presented) The photomask blank according to claim 118, having the thin film in which oxygen is continuously decreased and carbon is continuously increased from a surface of the thin film toward the transparent substrate, wherein a content of nitrogen in the nitride film is relatively larger than a content of nitrogen included in the thin film, and with increasing content of nitrogen of the nitride film, the metal is decreased.

123. (Previously Presented) The photomask blank according to claim 118, wherein the thin film is a Cr-containing film.

124. (Previously Presented) The photomask blank according to claim 118, wherein the transparent substrate is a quartz glass.

125. (Previously Presented) A photomask in which a mask pattern is formed by patterning the thin film formed on the transparent substrate of the photomask blank of claim 118.